governed by the genotype. This, at first glance, might imply that the phenotype is also unalterably determined at the time of fertilization. In a great number of cases this holds true, but there are many instances known where the phenotype may be affected in one way or another.

While such characters as hair color or eye color in human beings or mammals are easily understood, there are other traits that are not as readily recognized as being inherited by means of the same mechanisms. We have come to realize that, to mention one example, stature in human beings may be affected by variations in nutrition during critical growth periods; thus a child of relatively short parents may develop into a tall individual if properly fed during the growing period, yet at the same time, another individual may be properly fed and still remain short. This would simply indicate that the first individual had genotypically the ability to become tall if properly fed and the ability to remain short if improperly fed, while the second individual genotypically did not have this ability to respond in the same manner to the environmental effect. We might express this same situation by saying that both individuals are phenotypically of short stature, assuming the first individual was improperly nourished, but genotypically they are still different from each other, one having inherited the possibility of responding in different ways to environmental factors, while the other individual did not inherit such an ability.

From the foregoing it becomes clear, then, that many organisms may inherit the ability of responding to a variety of outside factors — factors situated in the environment in which the individual lives; we might call such individuals, for convenience in our discussion, "plastic forms". Other species not having inherited the ability of response to the environment by producing a different phenotype, by the same token, may be called "set forms".

The student of mollusk shells may become aware of these differences when he studies and compares the shells of one and the same species obtained from various points of a wide range of distribution. He will find, probably, that in some species there is no difference recognizable, no matter from where the shells were obtained. This would be the case in a "set" species. In other species, on the other hand, it may be possible for the experienced collector to look at a given shell and know the exact geographical locality from which it came ("plastic" species). It seems unnecessary to stress that many apparently "set" species of mollusks may possess a much greater range of distribution than is at present known, and having at the same time genotypically the ability to respond to different environmental conditions by producing different shell characteristics, thus actually being "plastic". In such a case, representatives obtained from scattered areas of the entire range of distribution may be mistakenly considered as different taxonomic entities. Only experimental transplantations of groups of individuals from one area into the other could reveal whether they are individuals of a "plastic" or "set" species. The assumption that they are part of a "plastic" species would gain strength, possibly, if specimens could be collected from all intermediate areas of the known localities.

From the foregoing, two observable facts can possibly be understood. First, it is an almost logical conclusion that a "set" species would have, generally speaking, a much more limited range of distribution than a "plastic" species may possess, simply because of the inability to produce different phenotypes in different environments, since it may be assumed, again generally speaking, that the different phenotypes of "plastic" species are better equipped to cope with the conditions in the particular environment in which they developed, although the possibility that there is no advantage (but also no disadvantage!) accruing to such variable forms must also be borne in mind. Secondly, that "plastic" species occupying large ranges of distribution have, once again generally speaking, acquired long lists of synonyms.

It is, however, also clear that the terms phenotypic and genotypic cannot be used correctly as truly alternative terms, since both "plastic" and "set" phenotypes are determined by the particular genotypes. If a student wishes to bring out the differences between a "plastic" and a "set" species, he may have to coin new terms (such as we have done here) to designate unmistakably, unequivocally, and logically what he really means. It is obviously inaccurate to state that a certain character in a particular species is phenotypic while another one is genotypic, when actually the student means that one character is a "plastic" character while the other one is a "set" character.